



SPECIFICATION

Substitute Specification for Application Number 10/820,268

TITLE: ~~Television~~ Station-to-receiver intermediately-positioned prescription television
picture or image signal enhancer

DESCRIPTION

CROSS-REFERENCES TO RELATED APPLICATIONS

1. Lee, 2000. "Monitor output device in high-definition television", U.S. Pat. No. 6,067,123.
2. Kim, et al., 2000. "Automatic picture size control method for semiwide-screen television receiver", U.S. Pat. No. 6,064,445.
3. Bando, et al., 2000. "Television signal receiving apparatus and method specification", U.S. Pat. No. 6,040,867.
4. Hamill, 1978. "Precise control of television picture size and position", U.S. Pat. No. 4,085,425.

5. Hutt, et al., 1977. "Television receiver system having facility for storage and display of character information selected from digitally encoded broadcast transmissions", U.S. Pat. No. 4,052,719.
6. Bogner, 1989. "Method of simultaneous depiction of at least two temporally sequential events on television, and equipment for implementing this method", U.S. Pat. No. 4,843,483.
7. Dougherty, and Jackson, 1948. "Apparatus for magnifying the images on television screens", U.S. Pat. No. 2,449,886.
8. Inglis, 1977. "Magnification of television images", U.S. Pat. No. 4,051,535.
9. Stevens, 2000. "Automatic visual correction for computer screen:, U.S. Pat. No. 6,018,339"
10. Gracz et al., 1993. "Multipurpose computerized television", 5,192,999
11. Naiff, 1999. "Personal computer-based set-top converter for television services", 5,982,363

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR
DEVELOPMENT

Not Applicable

REFERENCE to a MICROFICHE APPENDIX

Not Applicable

BACKGROUND OF THE INVENTION

1. Field of the Invention/Technical Field

The following is `A statement of the field of art to which the invention
pertains:

1. U.S. Class: 348

Field of Search: 348/554; 348/581; 348/423; 348/552

2. U.S. Class: 358

Field of Search: 358/231; 358/237; 358/250; 358/255; 358/335

3. U.S. Class: 340

Field of Search: 340/324AD

4. U.S. Class: 715

Field of Search: 715/700; 715/721

2. Description of the Related Art

Numerous patents and proposals describe television signal reception, conversion, decoding, and output, picture size manipulation within a particular television screen, and simultaneous picture depiction (Lee, 2000; Kim, 2000; Bando, et al., 2000; Hamill, 1978; Hutt, et al., 1977; Bogner, 1989). Dougherty (1977) and Inglis (1948) describe a television receiver with screen and magnifier which may be attached directly to or away from the screen.

The patents and proposals described above do not describe the enhancement of television pictures or images with regard to vision and perception from a television or television screen involving perception, as in a prescription for vision or in an eye-glass prescription enhanced television picture or image. The above described patents and proposals are also generally associated with broadcasted television signal reception, conversion, decoding,

and output. The above described patents do not describe the manipulation of broadcasted television signals, screens, or other devices involving eye glass type vision prescription enhanced perception of television pictures or images.

Stevens (2000) discloses an automatic visual correction system for a computer screen showing video signal being modified based on a user's prescription. Graczyk et al. (1993) teaches a television circuit in a multimedia computer for receiving television signals from television stations. Stevens(2000) discloses an automatic visual correction system for a computer screen showing a video signal being modified based on a user's prescription. Naiff (1999) teaches the use of a personal computer to transmit television signal to a remote television receiver. Stevens (2000) and Naiff (1999) describe the transmittal of computer video signals to a remote television, viewing a computer signal via a television receiver and using television signals to transmit computer signals.

To overcome these shortcomings, the present invention provides a vision prescription device located in line with and directly between the location of the originating television signal and the television signal receiver and through which the television signal passes.
~~the~~ The present invention provides enhancement of television pictures or images with regard to vision and perception, as pertaining to eye glass type vision prescriptions, from a television or television screen. The present invention contributes to the ease and convenience with which television pictures or images may be viewed or perceived through the provision of pictures or images which may be viewed per prescribed or prescription vision requirements.

BRIEF SUMMARY OF THE INVENTION

It is the objective of the invention to provide enhanced perception of television pictures or images to include eye glass type vision prescription.

BRIEF DESCRIPTION OF SEVERAL VIEWS OF THE DRAWINGS

The present invention will be more fully understood by references to the following brief description thereof when read in conjunction with the attached drawings, and wherein:

FIG. 1. Front view of a transparent glass, plastic or ply-carbonate etc. and metal and other material grid-type over-the-air television picture or image signal prescription re-focusing device and the depiction of digital television signal passing through the device located between the television station and the television receiver.

FIG. 2. Front view of a soft and hard filter-type over-the-air television picture or image signal prescription re-focusing device.

FIG. 3. Front view of a magnetic or electromagnetic borders and temperature and pressure borders surrounding a space with magnetic and electromagnetic waves within the borders through which the 20-20 vision original television signal passes.

FIG. 4. Side cross-sectional view of the device located in the digital cable wire or line depicting the television signal from the television station passing through the device to the television signal receiver.

FIG. 5. Television signal flow components concerning the originating 20-20 vision signal at the television station passing through the prescription enhancing device, then to the satellite, and the television signal from the satellite through the prescription enhancing device, then the prescription television signal to the television screen.

FIG. 6. Side view of the television signal from the television station passing through the present invention positioned close to the television station and far from the television signal receiver.

FIG. 7. Side view of the television signal from the television station passing through the present invention positioned far from the television station and close to the television signal receiver.

FIG. 8. Depiction of claimed device located on the television and also located between the originating television signal from the television station) and the television signal receiver.

FIG. 9. Front view of the direct television signal from originating television station signal producing device passing through the present invention and directly to TV station viewing screen.

DETAILED DESCRIPTION OF THE INVENTION

(References are to Illustrations)

The different types of the invention 1, 2, 5a-b and 6, may be used to enhance or re-focus digital and other over-the-air, cable wire and lines, and satellite and direct television signals. As each of these modes of television signal transportation includes the transport of 20-20 vision signals from the television station to the television receiver, the present invention is positioned intermediately directly between and in-line with the station and the receiver.

The present invention, referred to as the prescription television picture or image signal re-focusing and enhancing device, is made to allow over-the-air, cable, satellite and direct television feed signals whether analog, digital, video to pass through the present invention resulting in different and enhanced prescription television signals. The invention can be made of transparent type materials such as glass, plastic, CR-39, polycarbonate, Izon or Trivex, some of which have different indexes of refraction contributing to corrected vision abnormalities; in our case 20-20 vision television signals being refocused or prescribed to non-20-20 vision television signals. The invention acts

on television signals passing through the device similar to images passing through eye glasses or magnifying glasses for sight improvement. Similar devices include magnifying glasses, focus lenses, and vision prescription lenses. The transparent materials are made with prescriptions and re-focusing properties the change the television video waves from 20-20 vision to non-20-20 vision television video waves. The size of the invention may vary depending on the specific application. For example, the device positioned in a cable wire or line may require a 1 inch or so diameter, 0.5 inch thickness device while the device positioned for over-the-air television signals may require a 5 foot diameter device with 2 inch thickness. The dimensions of the device may include a broad range of lengths, widths, depths of various properties including 1mmx1mmx1 mm or less to 1mix1mix1mi (mile) with prescription vision ranging from very poor to very good.. Considering prescriptions and the present invention, the transparent type device may also be made similarly as eyeglass, binocular and telescope lens are made. The different materials of which the invention is made contribute to the change of 20-20 vision television signals passing through the invention because of the materials' wave and digital signal focusing, refractive, reflective, wave reshaping, wave affecting and prescription adjusting properties.

Considering Figure 1, the front view of a over-the-air television picture or image signal prescription re-focusing device 1, the device is made of transparent circular-shaped, glass, plastic, polycarbonate or other materials such as Trivex, Izon etc. with properties including index of refractions that change the 20-20 vision prescription digital and other wave lengths of waves passing through the device to particular non-20-20 vision

television signals going to the television signal receiver. The device is made such that the device is located between and directly in-line with the television station and digital and other television signal may pass through the device after the signal leaves the television station and continues to the television receiver. The metal and grid-type present invention 2, through which the television signals pass, is made with metals having electron or electronic, refractive, magnetic or electromagnetic or reflective properties that the adjustment or alteration the over-the-air or cable-in-line television signal wave to the desired length, height and prescription. This device may and may not be made in conjunction with the transparent and filter type prescription focusing devices. Figure 1 shows the front view of a transparent glass, plastic or ply-carbonate etc. and metal and other material grid-type over-the-air television picture or image signal prescription re-focusing device and the depiction of digital television signals 3, passing through the device located between the television station and the enhanced prescription and refocused signal 4, moving on towards the television receiver.

Figure 2 shows the front view of a soft 5a, and hard 5b, over-the-air, cable wire and lines, and satellite and direct television signal digital prescription prescribers and filter-type over-the-air and cable wire or line television picture or image signal re-focusing device. The soft filters are made of non-rigged materials including charged, magnetized, wave (or wave length, width, components, etc.) altering soft materials having such properties as magnetic and electromagnetic fields with the prescription-affecting properties and capability of changing the 20-20 vision television signals to particular non-20-20 vision television signals. The hard filters are made of non-rigid metal, plastics, wood and

natural materials that contribute to the production of non-20-20 vision prescription television signals that pass on to the television signal receiver.

Figure 3 depicts the front view of a magnetic or electromagnetic borders 6, and temperature and pressure borders 6, surrounding a space with magnetic and electromagnetic waves within the borders through which the 20-20 vision original television signal passes. The device is made with a grid of saturated or non-saturated magnetic or electromagnetic fields and wave producing technologies within and about the borders and as 20-20 vision television signals pass through the fields and waves the signal focus or prescription results in non-20-20 vision prescription signals to the television receiver.

Figure 4 depicts the side cross-sectional view of the device 1, 2, 5a-b and 6, located in the digital cable wire or line 7, depicting the television signal from the television station 3, passing through the device and the enhanced prescription signal 4, moving to the television signal receiver.

Figure 5 shows the television signal flow components concerning the originating 20-20 vision signal at the television station passing through the prescription enhancing device 1, 2, 5a-b and 6, then to the satellite 10, and the television signal from the satellite through the prescription enhancing device 1, 2, 5a-b and 6, then the prescription television signal to the television screen.

Figure 6 shows the side view of the television signal from the television station 3, passing through the present invention 1, positioned close to the television station as the enhanced prescription signal 4, and the present invention 1, 2, 5a-b and 6, positioned far from the television signal receiver 10.

Figure 7 shows the side view of the television signal from the television station 3, passing through the present invention 1, 2, 5a-b and 6, positioned far from the television station and close to the television signal receiver 10.

Figure 8 depicts the claimed device 1, 2, 5a-b and 6, located on the television 11, (and also located between the originating television signal from the television station) and the television signal receiver 10.

Figure 9 depicts the front view of the direct television signal from originating television station signal producing device 3, passing through the present invention 1, 2, 5 a-b, and 6, and direly to TV station viewing screen 12. Regarding claim 9, the television signal from the television station providing device is a direct feed from the originating television signal to the television station screen.

~~Television screens may be constructed with vision prescriptions made or incorporated into or about the screen. Television screens are also constructed as to cause the television picture or image to be pereceived or viewed per a particular vision prescription or range of vision prescriptions. Television screens may be constructed with vision prescriptions~~

~~enhanced devices made about the screen such as a vision prescription lens or device built in front of or about the television and television screen.~~ With regard to the manipulation of broadcast signals by the invention and delivering vision prescription enhanced pictures or images on or about television screens, the television signal may be non-20/20 vision, as compared to 20/20 vision or clear perception, as to produce vision prescribed enhanced pictures or images on the television screen. The device produces said variations on a screen or picture or image viewing apparatus attached to or remotely located regarding the location of the television. ~~The reproduction of pictures or images on or from a television screen may also be accomplished by picture or image signal manipulation.~~ With regard to the manipulation of broadcast signals by the invention and delivering vision prescription enhanced pictures or images on or about television screens, the normal television signal may be manipulated by an attached or non-attached ~~device~~ version of the invention that may enhance the perception of the pictures or images for prescribed or prescription vision. The vision prescription enhancing device, ~~relative to the television screen,~~ must be positioned such that the perception of the prescription enhanced picture or image is optimized. The present invention consists of television picture or image enhancing devices which allow picture or image perception variation regarding vision prescription for the television through directly attached, indirectly attached, or remote means (~~See FIG. 1~~). Perception variation is accomplished by the invention through the production of pictures or images which may be perceived or viewed per eye glass type vision prescription (~~See FIG. 1~~).

~~As shown in FIG. 1, the~~ The present invention is made to allow pictures or images on a television to be perceived or viewed clearly with 20/20 vision or non 20/20 or poor vision. ~~Vision prescriptions for television picture or image enhancement may be incorporated into or with the broadcasted television signals.~~ The pictures or images may be broadcasted to the television with pictures or images that can be perceived clearly by non-20/20 or poor vision viewers or may be further enhanced by the present invention being located about ~~or within~~ the television screen. Vision prescription enhanced television picture or image perception may have a range of vision prescriptions. The broadcasted television signal may be `focused` or manipulated as to incorporate the specifications of the desired vision prescription.

The television prescription ~~lens or screens~~ invention, the television signal prescription receiving and manipulating devices, and the focused television broadcast signals include vision prescription components including a) the base (spherical) strength and type (plus or minus), b) the cylinder strength and type, c) the cylinder axis orientation, and d) the strength of bifocal segment (if needed). These vision prescription components must be incorporated in the vision prescription invention lens, ~~screens~~, grids, filters, ~~films~~, ~~broadcast television~~ signal or signal manipulation used to incorporate vision prescriptions for non 20/20 and poor television ~~viewing viewers or pictures or images~~.

~~The surfaces on which television signals are received and from which the television picture or image is viewed or perceived by the viewer are made to incorporate or include the three or four components of eye vision prescriptions.~~ Generally, glass, plastic, and

similar materials are ground, are generally spherical but not necessarily round in shape, and use the general principles of optics to determine the dimensions of the ~~television screen invention, viewing surface, or for the present invention, the television lens.~~ In the case of non-glass type viewing surfaces, either films or other `in-between` prescription devices, or non-glass type prescription containing viewing surfaces are used. The ground lenses or viewing surfaces may be sanded, shaped, and smoothed. ~~Television viewing surfaces including lenses and other non-glass type viewing surfaces may be made and fitted into new or old television systems as to fit various television shapes, sizes, and apparatus.~~ Television prescription film containing or causing vision prescriptions to be incorporated into the viewed picture or image may be placed on, in front of, or behind ~~television picture or image viewing surfaces the invention.~~ The film, which may be similar to soft contacts or other material, also contain the three or four components of vision prescriptions.

The vision prescription invention including ~~television~~ lenses, screens, filters or films, and ~~viewing surfaces~~ may be cut, shaped, and designed to fit any of the various ~~present and new televisions~~ cable wire or line and over-the-air application. ~~The vision prescription television screens and viewing surfaces may be made into or onto old, new, and present televisions. The vision prescription television screens and viewing surfaces may be made into or onto televisions in the conventional method by which television screens and viewing surfaces are repaired, modified, or made into or onto televisions. Vision prescription lenses that are placed in front of or behind the television screen or viewing surface are made similarly to the initially discussed vision prescription lenses, screens, or~~

~~viewing surfaces and must be positioned as to produce an appropriate focal point for appropriate non 20/20 and poor vision viewing.~~

Considering the processes involved in resolution, television picture or image vision prescription may be ~~applied to screens by manipulating~~ directed from the invention prescription signals to the television screen pixels ~~on the screen~~ to reflect the application of vision prescription. Television picture or image vision prescription may be applied to the perception of television pictures or images by manipulating the properties and coatings, films, or etc. of the invention to reflect the application of vision prescriptions. Television picture or image vision prescription may be applied to the perception of television pictures or images by manipulating the components of the ~~signal-receiving device~~ invention to reflect the application of vision prescription. The perception of vision prescription television pictures or images is accomplished by applying vision prescription technologies such as lenses, coatings, films, pixel manipulation, etc. on or about the components of the ~~receiver~~ invention. ~~Television picture or image vision prescription may be applied to screens by manipulating the pixels on the screen to reflect the application of vision prescription.~~

The methods used to produce television picture or image enhancing systems which allow variation in the perception, as in prescription for vision, of the picture or image from a television include the use of lenses or screens, filters or films, coatings, signal receiving and manipulating devices, and focused television broadcast signals as the television signals pass through the invention. Multiple or mixed lenses or screens, filters or films,

signal receiving and manipulating devices, and focused television broadcast signals may also be incorporated to produce the appropriate vision prescription on the viewing surface. Simple, complex, or other types of lenses or screens, filters or films, signal receiving and manipulating devices, and focused television broadcast signals may be used to make the present vision prescription invention.

Devices such as vision prescription containing or manipulating lenses, films, and television signal prescription converting devices may be placed between ~~the viewer and the television picture or image viewing surface, between the original television signal and the viewer,~~ between the original television signal and the television receiver, ~~or between the viewing surface and the original television signal.~~ These devices include the three or four components of vision prescriptions and cause the television picture or image to be viewed clearly with a particular non 20/20 or poor vision. The focusing or vision prescription producing lens, filter, or other device must be positioned ~~on or in the screen or picture or image viewing surface, between television and viewer,~~ between television company's initial television signal and satellite or cable or television signal receiver, ~~between the television company's initial television signal and the television, between the television and the viewer, between the initial television signal and the viewer, or between the satellite or cable or receiver and the viewer.~~

Similar to cable television boxes that must generally be connected and configured between the original television signal and the television, television prescription manipulating devices may also be incorporated between the original television signal and

the television receiver for the present invention. The television prescription box may contribute to the delivery of a particular vision prescription picture or image already containing the components of vision prescriptions or may contribute to the focusing or conversion of television signals into television prescription signals.

Vision prescription television signals may be produced by placing a lens containing and producing the three of four components of vision prescriptions appropriately between the original television signal and the television ~~picture or image viewer~~ receiver. The prescription television signals may also be focused or produced using vision prescription components producing technology which may allow the manipulation of television broadcast signals incorporating the three or four vision prescription components.

Television signals or information may contact the viewing surface with and containing, or without and not containing, the vision prescription components. The resulting television picture or image must be able to be viewed clearly by a viewer requiring a particular vision prescription ~~at a particular distance from the television or from a given area. Vision prescription television pictures or images must be able to be viewed clearly if the original television signal is broadcast with or containing vision prescription.~~ Hence the clear, present, 20/20 vision viewing surface must contribute to a clear perception of the non 20/20 or poor vision prescription pictures or images. Television signals without and not containing vision prescription must contact the viewing surface in a manner as to allow the television signal to be appropriately focused or manipulated by the ~~television~~

invention prescription lens as to produce appropriate vision prescription enhanced pictures or images for the viewer.

Television picture or image vision prescriptions are made by applying vision prescription technologies such as lenses, coatings, films, pixel manipulation, signal manipulation, etc. including microprocessors to (on or about) various components of ~~cable modems and such devices including the tuner, demodulator, modulator, media access control device, and the microprocessor~~ invention. Television picture or image vision prescriptions are also made by applying similar technologies to the signal from the ~~cable modem to the television, key board, or computer~~ invention. ~~Television picture or image vision prescriptions are also made by applying similar technologies to the cable headend transmitters, the cable modem termination system, or the internet connection or signal.~~

Television broadcast signals and other television information are broadcasted through air (involving antennas, satellites, receivers, etc.) and may also be delivered by cable type devices. The intermediately position invention enhancement of the broadcasting and delivery of vision prescription television signals to the ~~viewer~~ receiver are done in such a manner that the television signal or other information are viewed or perceived clearly by the non 20/20 or poor television viewer. The television picture or image is viewed or perceived clearly by a viewer with non 20/20 vision.

Regarding the broadcast or transmittal of prescription vision pictures or images passing through the invention, television signal focusing for vision prescription television picture

or image production may be done a) ~~in the television camera lens(es), b) in the image or moving image scanning phase, c) as the electronic signal is transmitted or sent from the station and passes through the invention,~~ d) or as the pictures or images are received by move towards the receiver or monitor. Vision prescription lens or other vision prescription coatings, films, and methods may be incorporated a) ~~into or about one or more camera lenses, b) within the camera housing, c) within or about pick up devices, d) within or about the viewfinder, e) within or about the camera tube or charge coupled device or prior to the signal reaching the signal~~ receiving device, f) ~~on or about the monitor,~~ or g) within or about the electronic signal passing through the invention.

~~Television picture or image vision prescriptions are made in or about the cathode ray tube or CRT used for image display. Television picture or image vision prescription are made on or about the CRT including the cathode, conductive coating, the anode, the phosphor-coated screen, electron beams and image or picture painting, and the shadow mask.~~

~~Vision prescriptions may be incorporated into television signals or pictures or images as signals are mixed with video signals (from video tape players, computers, film chains or telecines), or in or about the switcher (combines or mixes signals).~~

Television vision prescription pictures and images are made into enhanced broadcast programming received through an antenna, ~~VCR or DVD players that connect to the antenna terminals, cable TV and the set top box,~~ and satellites and satellite dishes including geosynchronous orbit. This also includes the composite TV signal, the vestigial picture sideband, the video carrier, the fully transmitted picture sideband, and the sound carrier. Television vision prescription pictures and images inventions are made into or

about microwave transmitters, receiving towers, and for community antenna television as long as the invention is positioned between the originating television signal and the television signal receiver.

Prescription vision television signals are broadcasted similar to cable television signal broadcasting. The signals are focused within the invention positioned in the cable wire or line using lenses, films, filters, coating, or computer assisted vision prescription and optical techniques including vision prescription producing techniques, and to include television and computer coupling techniques, to produce television signals and picture or images with vision prescription. The focusing or image or picture producing method may be included in the complete video signal, the transmitter or transmitting method including the carrier wave, the receiving device, the wire through which the signal is sent or transmitted, through a device in the air through which the signal travels, the antenna, ~~from video players, or the satellite, or the monitor by which the picture or image is viewed.~~ The television signal is focused as to reflect vision prescriptions and to contain the necessary parts of vision prescriptions.

~~Television picture or image vision prescription is made in or about the cable office or in or about the amplifiers between the cable office and a house, building, or other place where televisions are located.~~ Television picture or image vision prescription is made in or about fiber-optic cables. Similar to television signal scrambling in which slightly offset signals are inserted using the scrambling system to interfere with the television picture and channel's frequency and then may be filtered out for a clear picture, television vision

prescription signals may be similarly applied to invention enhanced broadcast television signals.

Television vision prescription enhanced broadcast and transmitted signals are also produced for HDTV, flat television, DVDs, and digital processing. Vision prescription television ~~screen dimensions~~ signals are made such that the ~~screen~~ signal fits the television in question or the appropriate aspect ratio or the required television screen. Vision prescription pictures or images are also made for lighter and larger screen formats, as well as in the signal converting process including digital to analog and analog to digital conversion. Vision prescription pictures or images are produced in or about the coaxial cable and fiber optic cable.

Vision prescription television picture or image screens ~~and receivers~~ that stand alone are made considering the above descriptions ~~for vision prescription screens, receiving, and broadcasting components~~. The invention is made to allow variation of the vision prescription.